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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,952	08/04/2003	Yasushi Kinoshita	029650-143	4467

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BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
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EXAMINER

RAYFORD, SANDRA M

ART UNIT PAPER NUMBER

1772

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/632,952	KINOSHITA ET AL.	
	Examiner	Art Unit	
	Sandra M. Nolan	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 1-11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8-4 and 12-10-03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims

1. Claims 1-11 are pending.

Information Disclosure Statement

2. The information disclosure statements (IDS's) submitted on 04 August and 30 December 2003 were considered by the examiner.

Non-US citations that were not supplied to the office have been crossed off the form(s), where appropriate.

Claim Objections

3. Claims 1-11 are objected to because of the following informalities:
 - a. In claim 1, what do "long-sized" and "short-fibers" mean?
 - b. In claim 6, what do "nanocarbon tubes" and "nanocarbon fibers" refer to? Did applicants intend to claim carbon nanotubes and carbon nanofibers?

Appropriate correction to clarify the claims is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 1-6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al (WO 01/34062A2) in view of Parsonage (US 2003/0093107A1).

Both references were cited by applicants in IDS's.

Chen teaches balloons (abstract) containing matrices (abstract) and micro-fibers (page 9, claim 1 of publication). The balloons are used in catheters (page 1, line 9). The microfibers of Chen's claim 1 are oriented parallel or diagonally to the longitudinal axis of the balloon. In claim 12 (on the same page), the microfibers are oriented transverse to the longitudinal axis of the balloon.

Chen fails to teach carbon nanofillers.

Parsonage teaches, in par. 0029 (on page 4), that carbon nanotubes and nanofibers are used as fillers in balloons and catheters (page 1, par. 0007). The fillers are added before the resin matrix is polymerized (page 7, par. 0057) or they are used in extruders that provide ultrasonic mixing (page 11, claim 48). The use of nanofillers produces articles having superior properties (abstract).

The references are analogous because they both deal with the reinforced devices for medical treatment.

It would have been obvious to one having ordinary skill in the art at the time of the invention to employ the carbon nanofillers of Parsonage and the mixing procedures

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when making the catheters/balloons of Chen in order to produce catheters/balloons having the superior properties associated with nanofilled materials.

The motivation to employ the nanofillers of Parsonage in the catheters/balloons of Chen is found in the Parsonage abstract, where it teaches that its nanofillers yield superior properties.

It is deemed desirable to make catheters/balloon having superior properties so that they will have longer useful lives.

The pretreatment of fillers to enhance bonding is well known in the art.

The processes by which fillers are mixed with matrices do not distinguish the catheters of the instant claims from those suggested by the combined references.

Conclusion

Any inquiry concerning this communication should be addressed to Sandra M. Nolan-Rayford, at telephone number 571/272-1495. She can be reached Monday through Thursday, from 6:30 am to 4:00 pm, ET.

If attempts to reach the examiner are unsuccessful, contact her supervisor, Harold Pyon, at 571/272-1498.

The fax number for patent application documents is 703/872-9306.

S. M. Nolan-Rayford
S. M. Nolan-Rayford
Primary Examiner
Technology Center 1700

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